



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/926,347 | 10/17/2001 | Shogo Ishioka | 011117 | 7860 |

23850 7590 02/03/2003

ARMSTRONG, WESTERMAN & HATTORI, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

HOLLINGTON, JERMELE M

ART UNIT PAPER NUMBER

2829

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 09/926,347 | Applicant(s) ISHIOKA ET AL. | |
| | Examiner Jermele M. Hollington | Art Unit 2829 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-16 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 15-17 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a coupling capacitance lying between said inspection chip and said conductive pattern (claim 9) and a plurality of sensor elements [claim 10] must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show coupling capacitance as described in the specification on page 11, lines 18-29. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Art Unit: 2829

Information Disclosure Statement

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the examiner on form PTO-892 has cited the references, they have not been considered [see page 13, line 12].

Specification

5. Applicants are reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The abstract of the disclosure is objected to because it is not limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

7. The disclosure is objected to because of the following informalities: on page 14, line 14, the phrase "mounted shank 204" should be changed to --mounted shank 204a--.

Appropriate correction is required.

8. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

9. Claim 3 is objected to because of the following informalities: in line 1 of the claim, “a end” should be changed to --an end--. Appropriate correction is required.
10. Claim 15 is objected to because of the following informalities: in line 2 of the claim, “an inspection apparatus” should be changed to --said inspection apparatus--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

12. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 10, it is not clear what is representing “a plurality of sensor elements” that detects an inspection signal. On pages 11-12, it describes that the inspection signal is detected from a cell, which in formed an image data for an inspector to identify the presence of an error such as disconnection, short circuit or chipping. Therefore, it does not particular point out what is used as the sensor elements for detecting the inspection signal.

For examination purposes, the examiner is not given patentable nor rejecting this claim under prior art until further explanation of the sensor elements has been given by the applicants.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2829

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

14. Claims 1-8 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Wood et al (5302891).

Regarding claim 1, Wood et al disclose [see Fig. 2] an inspection apparatus (burn-in fixture 11) comprising an inspection chip (die 21) for inspecting a conductive pattern of a circuit board (not shown in the figures), an insulative package (die cavity plate 13) mounting the inspection chip (21) thereon with allowing an inspection surface of the inspection chip (21) to be exposed from the insulative package (13), a chip-side bump electrode (bump 47) provided at each of electrode pads (bond pads 27 see Fig. 1) of the inspection chip (21), a package-side bump electrode (bump 48) provided at each of electrode pads (contact pads 37 see Fig. 1) of the package (13), an anisotropic conductor (plastic film 43) disposed to cover at least the chip-side bump electrode (47) and the package-side bump electrode (48) and a conductive layer (elastomeric strip 53) located on the anisotropic conductor (43) and extending at least in the range of the chip-side bump electrode (47) to the package-side electrode bump (48), wherein the anisotropic conductor (43) is thermo-compression bonded in between the conductive layer (53) and the chip-side bump electrode (47) and in between the conductive layer (53) and the package-

Art Unit: 2829

side electrode bump (48), so as to electrically connect the chip-side bump electrode (47) with the package-side bump electrode (48) with through the conductive layer (53).

Regarding claim 2, Wood et al disclose the package (11) includes a recessed portion (spacer plate 29) on the front surface side thereof, wherein the inspection chip (21) is embedded mounted in the recessed portion (29).

Regarding claim 3, Wood et al disclose the package (11) has an end face [not numbered but shown in Fig. 2] on the front surface side thereof approximately flush with inspection surface of the inspection chip (21).

Regarding claim 4, Wood et al disclose the anisotropic conductor (43) is disposed to extend from the chip-side bump electrode (47) to the package-side bump electrode (48).

Regarding claim 5, Wood et al disclose the anisotropic conductor (43) is disposed to approximately cover the entire front surface of the inspection chip (21).

Regarding claim 6, Wood et al disclose the conductive layer (53) is composed of a conductor film formed in a planar shape and approximately in parallel with the inspection surface of the inspection chip (21).

Regarding claim 7, Wood et al disclose an insulative film (cover plate 51) disposed to cover approximately the entire front surface of the inspection chip (21).

Regarding claim 8, Wood et al disclose the package (13) includes a through hole (31) penetrating from the front surface to the rear surface of said package, and an external electrode (connector leads 33) provided at the rear surface, wherein a lead (conductive traces 45) is electrically connected to the external electrode (33) through said through hole (31) [via spacer plate 29].

Regarding claim 14, Wood et al disclose [see Fig. 2] a holder (burn-in fixture 11) [see **Note** below] including a packaged inspection chip (21) for inspecting a conductive pattern of a circuit board (not shown in the Figures) comprising a holding table (die cavity plate 13), an elastic member (spacer plate 29) fixed on top surface of said holding table (13) and an engaging member (cover plate 51) fixed on top surface of the elastic member (29) to retain an inspection apparatus (21).

[**Note:** The recitation “for holding an inspection apparatus” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).]

Regarding claim 15, Wood et al disclose the holder (11) is adapted to hold said inspection apparatus (21) with keeping the inspection apparatus (21) in a slanted position, the inspection apparatus (21) including a package inspection chip (21) for inspecting a conductive pattern of a circuit board (not shown in Figures).

15. Claims 11-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Haseyama et al (6229320).

Regarding claim 11, Haseyama et al disclose [see Fig. 7] a holder (IC socket 20) [see **Note** below] including a packaged inspection chip (25) for inspecting a conductive pattern of a circuit board (test board 32) comprising a holding table (socket body 21), an elastic member (31) provided at the top surface of the holding table (21) and allowing the inspection apparatus (25) to be placed thereon and a holding member (lid 22) mounted on the holding table (21) and having

Art Unit: 2829

claw (lock lever 29) for defining the upper limit position of the inspection apparatus (25) placed on the elastic member (31).

[**Note:** The recitation “for holding an inspection apparatus” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hiran*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).]

Regarding claim 12, Haseyama et al disclose the claw (29) is adapted to contact a part of the inspection apparatus (21) so as to define the upper limit position.

Regarding claim 13, Haseyama et al disclose a probe (30) mounted on the holding table (21) and penetrating the elastic member (31) to contact an electrode (28) provided in the inspection apparatus (25), the probe (30) being elastically displaceable mounted on the inspection apparatus (25).

Regarding claim 14, Haseyama et al disclose [see Fig. 10] a holder (IC socket 20A) [see **Note** below] including a packaged inspection chip (25) for inspecting a conductive pattern of a circuit board (test board 32) comprising a holding table (socket body 21), an elastic member (31A) fixed on top surface of said holding table (21) and an engaging member (positioning plate 36) fixed on top surface of the elastic member (31A) to retain an inspection apparatus (25).

[**Note:** The recitation “for holding an inspection apparatus” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See

Art Unit: 2829

In re Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).]

Regarding claim 15, Haseyama et al disclose the holder (20A) is adapted to hold said inspection apparatus (25) with keeping the inspection apparatus (25) in a slanted position, the inspection apparatus (25) including a package inspection chip (25) for inspecting a conductive pattern of a circuit board (32).

Regarding claim 16, Haseyama et al disclose [see Fig. 7] a holder (IC socket 20) [see **Note** below] including a packaged inspection chip (25) for inspecting a conductive pattern of a circuit board (test board 32) comprising a holding table (socket body 21), a plurality of probes (30) provided in said holding table (21) and supporting the inspection apparatus (25) with brining each tip of said probes (30) into contact with an electrode (28) of the inspection apparatus (25) and a holding member (lid 22) mounted on the holding table (21) and having a claw (lock lever 29) for defining the upper limit position of the inspection apparatus (25) placed on the elastic member (31), wherein each of the probe (30) being elastically displaceable mounted on the inspection apparatus (25).

[**Note:** The recitation “for holding an inspection apparatus” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).]

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kubota et al (3787768), Kinsman et al (5173451), Akram et al (6018249, 6072326,

Art Unit: 2829

6353328 and 6373273), Hembree et al (6313651), Farnworth et al (6383825) and Hembree (6400169) disclose a method and apparatus for a chip scale package in a socket.

17. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter: in regarding claim 9, the prior art discloses all of the claimed invention except for the inspection signal is detected through a coupling capacitance lying between an inspection chip and a conductive pattern of a circuit board.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (703) 305-1653. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703) 308-1233. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Jermele M. Hollington
Examiner
Art Unit 2829

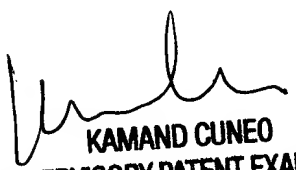
Application/Control Number: 09/926,347

Page 11

Art Unit: 2829

J. m. H.
JMH

January 9, 2003


KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800